



A.D. 1872, 31st JANUARY. N° 305.

SPECIFICATION

OF

JAMES ARCHIBALD JAQUES
AND
JOHN BANKS.

SURGICAL INSTRUMENTS.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY :

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
25, SOUTHAMPTON BUILDINGS, HOLBORN.

Price 4d.

1872.



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Surgical Instruments.

LETTERS PATENT to James Archibald Jaques, of Tottenham, in the County of Middlesex, Chemist, and John Banks, of Colney Hatch Road, Wood Green, in the same County, Surgical Instrument Maker, for the Invention of “**IMPROVEMENTS IN THE MANUFACTURE OF SURGICAL INSTRUMENTS.**”

Sealed the 23rd July 1872, and dated the 31st January 1872.

PROVISIONAL SPECIFICATION left by the said James Archibald Jaques and John Banks at the Office of the Commissioners of Patents, with their Petition, on the 31st January 1872.

We, JAMES ARCHIBALD JAQUES, of Tottenham, in the County of Middlesex, Chemist, and JOHN BANKS, of Colney Hatch Road, Wood Green, in the same County, Surgical Instrument Maker, do hereby declare the nature of the said Invention for “**IMPROVEMENTS IN THE MANUFACTURE OF SURGICAL INSTRUMENTS,**” to be as follows:—

Our Invention of improvements in the manufacture of surgical instruments relates to that class of instruments (either tubular or solid) which

Jaques & Banks' Improvements in Surgical Instruments.

are intended to be introduced into cavities in the body for various surgical purposes. The instruments comprised in this class include œsophagus tubes and bougies, rectum, vagina, uterus, urethra, eustachian, nasal and other tubes, rectum and urethra bougies, catheters, rectum and other plugs, connecting tubes for enema apparatus, stomach 5 pumps, and other analogous apparatus. Some of these instruments have heretofore been made of metal when great strength is required, and there is no objection to the rigidity of this material, but others which must of necessity be flexible have usually been made of some textile material, such as silk, cotton, or flax, woven or plaited into a tubular 10 form and coated internally and externally with some gummy or resinous preparation and then varnished. It has been found that tubular instruments made in this manner either do not possess sufficient flexibility or they are liable to become cracked and damaged in use. In hot climates, moreover, these instruments become sticky and in a short time 15 totally useless.

Our Invention consists in making the above and other analogous surgical instruments of a material, or rather a compound of materials, which will possess the requisite strength, flexibility, and hardness externally which are so essential for instruments of this class. The 20 material we use for these purposes is a compound of hard and soft india-rubber, prepared by mixing metallic sulphurets with the native rubber and then submitting the mixture to definite degrees of heat so as to produce the desired chemical change in the mass. The mode of preparing the rubber to produce this change in its constitution is usually 25 called mineralizing or vulcanizing, and forms no part of our present Invention. The interior or core of all these instruments is made of the hard compound to give the article sufficient rigidity, and the exterior or outer surface of the article is formed of soft vulcanized rubber to impart the required amount of softness and flexibility, the two kinds of 30 rubber being firmly united together in the process of manufacture.

Any person conversant with the manufacture of vulcanized india-rubber will know that the amount of rigidity to be given to any particular instrument will depend upon the thickness of the hard rubber used in making the article.

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SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said James Archibald Jaques and John Banks in the Great Seal Patent Office on the 31st July 1872.

TO ALL TO WHOM THESE PRESENTS SHALL COME, we, JAMES
5 ARCHIBALD JAQUES, of Tottenham, in the County of Middlesex, Chemist, and JOHN BANKS, of Colney Hatch Road, Wood Green, in the same County, Surgical Instrument Maker, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Thirty-first day of January, in the year
10 of our Lord One thousand eight hundred and seventy-two, in the thirty-fifth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto us, the said James Archibald Jaques and John Banks, Her special licence that we, the said James Archibald Jaques and John Banks, our executors, administrators, and assigns, or such others as we, the
15 said James Archibald Jaques and John Banks, our executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel
20 Islands, and Isle of Man, an Invention for “IMPROVEMENTS IN THE MANUFACTURE OF SURGICAL INSTRUMENTS,” upon the condition (amongst others) that we, the said James Archibald Jaques and John Banks, our executors or administrators, by an instrument in writing under our, or their, or one of their hands and seals, should particularly describe and ascertain the
25 nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said James Archibald Jaques, on behalf
30 of myself and of the said John Banks, do hereby declare the nature of our said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement (that is to say) :—

Our Invention of improvements in the manufacture of surgical instru-
35 ments relates to that class of instruments (either tubular or solid) which

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are intended to be introduced into cavities in the body for various surgical purposes. The instruments comprised in this class include œsophagus tubes and bougies, rectum, vagina, uterus, urethra, eustachian, nasal, and other tubes, rectum and urethra bougies, catheters, rectum and other plugs, connecting tubes for enema apparatus, stomach pumps, and 5 other analogous apparatus. Some of these instruments have heretofore been made of metal when great strength is required, and there is no objection to the rigidity of this material, but others which must of necessity be flexible have usually been made of some textile material, such as silk, cotton, or flax, woven or plaited into a tubular form and 10 coated internally and externally with some gummy or resinous preparation and then varnished. It has been found that tubular instruments made in this manner either do not possess sufficient flexibility, or they are liable to become cracked and damaged in use. In hot climates, moreover, these instruments are liable to lose their tubular form, become 15 sticky, and are in a short time totally useless.

Our Invention consists in making the above and other analogous surgical instruments of a material, or rather a compound of materials, which will possess the requisite strength, flexibility, and hardness which are so essential for instruments of this class. The material we use for 20 these purposes is a compound of hard and soft india-rubber, prepared by mixing metallic sulphurets with the native rubber and then submitting the mixture to definite degrees of heat so as to produce the desired chemical change in the mass. The mode of preparing the rubber to produce this change in its constitution is well known; it is usually 25 called mineralizing or vulcanizing, and forms no part of our present Invention.

The instruments are made according to our Invention with a core or lining of the hard compound to give the article the requisite rigidity, and the exterior or outer surface of the instrument is formed of soft vul- 30 canized rubber to impart the required amount of softness and flexibility thereto. These two kinds of rubber when combined will become firmly united in the process of manufacture.

Any person conversant with the manufacture of vulcanized india-rubber will know that the amount of rigidity to be given to any 35 particular instrument will depend upon the thickness of the hard rubber used in making the article, and no rule can therefore be laid down for the relative proportions of thickness of the two kinds of rubber. The

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heads of these instruments, whether closed or open, may be formed of hard rubber, and the opposite ends may be formed of moulded hard rubber, either covered or not with a softer material. These instruments we cure either in moulds corresponding in shape to the form of the
5 instrument, or we embed them in French chalk or other suitable material and submit them to the curing operation. On removing the cured instruments from the oven they will be found to possess permanently the required degree or amount of rigidity, elasticity, and softness without having any tendency to become tacky or to crack under extremes of
10 temperature.

Having now set forth the nature of the Invention of "Improvements in the Manufacture of Surgical Instruments," and explained the manner of carrying the same into effect, we wish it to be understood that under the above in part recited Letters Patent we claim, manufacturing surgical
15 instruments of the class above indicated from compound rubber, in the manner above described.

In witness whereof, I, the said James Archibald Jaques, have hereunto set my hand and seal, the 31st day of July, in the year of our Lord One thousand eight hundred and seventy-two.

20

JAS. A. JAQUES. (L.S.)

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1872.

